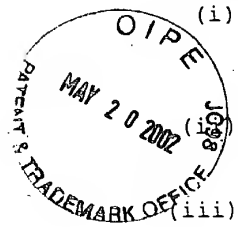


SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT: Rybak, Susanna M.
Newton, Dianne L.
Goldenberg, David M.



(ii) TITLE OF INVENTION: Immunotoxins Directed Against Malignant Cells

(iii) NUMBER OF SEQUENCES: 3

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Townsend and Townsend and Crew LLP
(B) STREET: Two Embarcadero Center, Eighth Floor
(C) CITY: San Francisco
(D) STATE: California
(E) COUNTRY: USA
(F) ZIP: 94111-3834

T, 9000

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: US 09/071,672
(B) FILING DATE: 01-MAY-1998
(C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: US 60/046,895
(B) FILING DATE: 02-MAY-1997

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Weber, Ellen Lauver
(B) REGISTRATION NUMBER: 32,762
(C) REFERENCE/DOCKET NUMBER: 015280-32510US

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: (415) 576-0200
(B) TELEFAX: (415) 576-0300

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 104 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS:
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /product= "OTHER"
/note= "Xaa = Glu or pyroglutamic acid"

(ix) FEATURE:

- (A) NAME/KEY: Protein
- (B) LOCATION: 1..104
- (D) OTHER INFORMATION: /note= "RNase A derived from
Rana pipiens, "onc protein"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

```

Xaa Asp Trp Leu Thr Phe Gln Lys Lys His Ile Thr Asn Thr Arg Asp
1           5           10           15
Val Asp Cys Asp Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys Asp
20          25          30
Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile Cys
35          40          45
Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe Tyr
50          55          60
Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu Lys
65          70          75          80
Lys Ser Thr Asn Lys Phe Cys Val Thr Cys Glu Asn Gln Ala Pro Val
85          90          95
His Phe Val Gly Val Gly Ser Cys
100

```

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 249 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..249
- (D) OTHER INFORMATION: /note= "nucleic acid encoding
"onc protein"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

```

GATGTTGATT GTGATAATAT CATGTCAACA AACTTGTTC ACTGCAAGGA CAAGAACACT      60
TTTATCTATT CACGTCCTGA GCCAGTGAAG GCCATCTGTA AAGGAATTAT AGCCTCCAAA      120

```

```

AATGTGTTAA CTACCTCTGA GTTTTATCTC TCTGATTGCA ATGTAACAAG CAGGCCTTGC      180
AAGTATAAAT TAAAGAAATC AACTAATAAA TTTTGTGTAA CTTGTGAAAA TCAGGCACCA      240
GTTCAATTTT                                     249

```

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 83 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(ix) FEATURE:

- (A) NAME/KEY: Protein
- (B) LOCATION: 1..83
- (D) OTHER INFORMATION: /note= "'onc protein", positions 16-98
of SEQ ID NO:1"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

```

Asp Val Asp Cys Asp Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys
1           5           10           15
Asp Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile
          20           25           30
Cys Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe
          35           40           45
Tyr Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu
          50           55           60
Lys Lys Ser Thr Asn Lys Phe Cys Val Thr Cys Glu Asn Gln Ala Pro
65           70           75           80
Val His Phe

```